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*Testimony of Kim Pargoff, Energy Advocate - Environment Michigan*

Thank you for taking my testimony today. I am speaking on behalf of Environment Michigan, a non-profit, non-partisan organization with thousands of members across the state who are eager to see a strong Renewable Energy/Portfolio Standard (RES) policy implemented in Michigan.

**I am testifying in support of HB 4539 and HB 4562 with strengthening amendments that include a 25% by 2025 renewable energy goal and a clean definition of biomass. A strong RES should be the first part of a clean energy package that includes a 1% Energy Efficiency Requirement, updated building codes and updated appliance efficiency standards. We oppose HB 4319 for reasons including targets for renewable energy that are too low and a definition of renewable energy that includes dirty sources. HB 4539 or HB 4562 with mentioned amendments would move Michigan from a clean energy laggard to a leader in the emerging renewable energy industry.** Michigan needs a strong RES for 4 key reasons:

**First, Michigan needs to take bold action to catch up to other states in attracting new high-tech jobs**

- Twenty-four states already have successful RESs; more than 10 states (including Pennsylvania, Minnesota and Wisconsin) are going back and increasing their standards because they have seen so much success; these states are already reaping economic benefits including thousands of new high-tech jobs. Michigan hasn't even taken the first step.
- Michigan is the 14th windiest state in the country (only counting on-shore potential) – with more on-shore wind generating potential than California, Illinois, New York, Wisconsin and Pennsylvania – all states with RESs.

Without a strong RES Michigan will miss the potential to leverage its industrial strengths and the potential for billions in investment and thousands of jobs.

**Second, a strong RES is needed because there is no "free market" for electricity and Michigan already has a coal and nuclear mandate and, therefore, underutilizes renewables** – utilities build new power plants through surcharges (increased rates) on bills; customers are required to buy this power while energy companies are guaranteed profits.

- A RES provides the needed market stability and regulatory environment for investors to come into the state and spend millions on renewable energy developments. Most investments in renewable energy are occurring in the states with standards (over 90% of new renewable generation).
- A RES will ensure some investment in new electricity generation – which the PSC says is needed – is directed to the resources that most benefit our economy and environment.

- The MPSC, DOE and numerous other sources show wind and biomass costs are comparable to new coal, cheaper than new IGGC coal, and cheaper than coal with carbon costs; The cost of wind and solar have declined 80%-90% in the last decade and analysts predict renewable energy prices will continue to decline over the next decade while coal costs rise.

- The Public Service Commission's 21st Century Energy Plan analysis shows that the combined Energy Efficiency and Renewable Energy scenario is cheaper than a coal and nuclear scenario for Michigan and that the cost of a scenario including renewables is comparable to the cost of a coal only scenario (within the margin of error for the study).[1] The recent NextEnergy study found a scenario combining a RES and Energy Efficiency would deliver the lowest long-term utility rates compared with any other scenario – *including relying only on new coal plants.*[2]

- A March 2007 study by the Department of Energy found that state renewable energy standards have minimal rate impacts. This study which compares the results from 28 RES programs shows an average electricity bill increase of just 38 cents for a typical residential household (less than $5 a year) with six states seeing lower rates. [3] Furthermore, experts predict a carbon tax is on the horizon and that even a moderate carbon tax would add 1.5 to 2.0 cents / kWh to the price of coal-generated electricity - thus increasing the relative value of renewable fuels such as wind and solar.[4]

- Experience in nearly two dozen other states has shown that voluntary renewable energy programs do not create meaningful new development and investment. A National Renewable Energy Laboratory study shows that by 2010, voluntary programs alone would only increase renewable energy generation by about one percent. For example, if DTE's GreenCurrents program meets its subscriber goal, new renewables would only be .6% of their total load. Because there is no market distinction between dirty and clean electricity, utilities will continue charging a premium for clean electricity.

**Third, the Michigan public is ready for action.**

- Recently, Environment Michigan delivered over 8,000 public comments to the legislature showing the overwhelming support for a 20% by 2020 RES – which marked just the start of our public comment drive and effort to speak to 100,000 households about renewable energy this summer. Public support for clean energy is reaching record highs due to concerns about global warming, dependency on imported fuels, air pollution and our economy.

- According to the US Department of Energy, Michigan has 16,000 MW of high-quality wind generating potential (class 4 or higher) – The MPSC found a 10% RES would require 2,200 MW of wind. Hence, Michigan only needs to capture 13% of our on-shore class 4 or higher wind resources to meet the initial RES goal laid out in HB 4562 – leaving a large margin for future growth and land use considerations. The analysis arriving at 16,000 MW factors in significant land use exclusions such as cities, airports, protected land and environmental restrictions (over 45% of wind areas are excluded). With Michigan's vast wind resources, the areas with the best resources and most public support could and should be developed first.

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[1] MPSC 21st Century Energy Plan and EnergyPlan Appendix 2
[2] NextEnergy study, p. 40.
[3] March 2007.DOE's Lawrence Berkeley Laboratory

[4] EPRI 2006

**Fourth, Michigan needs a strong RES for the protection of our environment, public health, and Great Lakes and to reduce global warming pollution**

- According to the EPA, 7.7million Michiganders live in places where the air is unsafe to breathe. Fine particular matter from power plants leads to 24,000 asthma attacks and almost 1,000 premature deaths per year in Michigan.[5]
- Mercury pollution from power plants limits consumption of fish caught in all of Michigan's inland lakes and streams, has crippled our multi-billion dollar fishing industry, and once in our bodies results in a loss of intelligence.
- Michigan is the 10th largest emitting state of global warming (CO2) emissions, putting our state at risk in light of potential a carbon tax or cap. Already, we are seeing declining lake levels, warming of our waters and other impacts from global warming.

**Renewable energy is key to Michigan's economic redevelopment and environmental protection.**

- RESs have swept through the legislatures in dozens of others states with strong bi-partisan support – because they are win-win policies. During these troubled economic times, our state must slow the $20 billion drain on our economy from imported fuels and move towards a better, cleaner energy future.

  A strong RES will:

  1) Reduce our dependence on imported fossil fuel sources and the annual $20 billion dollar drain on our economy and keep that money here in Michigan
  2) Diversify our energy portfolio and position Michigan for the 21st Century
  3) Help protect our air, Great Lakes, and way of life
  4) Reduce Michigan's global warming emissions and prepare for a carbon-constrained economy
  5) Allow Michigan to use its industrial strengths and become a leader in high-tech renewable energy industry
  6) Create thousands of new high-tech jobs

Please support HB 4539 and HB4562 with strengthening amendments as the first part of Michigan's clean energy strategy; a win for Michigan's economy and environment. Thank you very much for your time.

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[5] Abt Associates Inc. et al, *Power Plant Emissions: Particulate Matter-Related Health Damages and the Benefits of Alternative Emission Reduction Scenarios*, 06 2004,

# Renewable Energy Standards

**TO:** The Michigan Legislature
**FROM:** Environment Michigan & Michigan Environmental Council
*(For more information contact Kim Pargoff at 310-429-9160)*
**DATE:** June 6, 2007
**RE:** Renewable Energy Standards (RES): Answers to Members' Questions from Hearings

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**Q: What is the cost of new renewable energy (compared to new coal and nuclear power plants)?**

**A:** Renewable energy costs vary by region and application; however, The Public Service Commission stated that in Michigan wind currently costs $.072 / kWh and biomass costs $.069 / kWh.[1] Coal plants currently under construction in the Northeast cost $.08 / kWh. New nuclear power costs even more, approximately $.11 / kWh, and requires hundreds of millions in subsidies. Coal has a carbon and fuel price volatility risk from the rising cost of oil for transportation. Experts predict a carbon tax is on the horizon and that even a moderate carbon tax would add 1.5 to 2.0 cents / kWh to the price of coal-generated electricity - thus increasing the relative value of renewable fuels such as wind and solar, which have no fuel costs.[2]

Healthcare and environmental impact costs that are not reflected in utility rates cost Michigan millions. According to the EPA, fine particular matter from power plants leads to 24,000 asthma attacks every year in Michigan, with over 1400 requiring an emergency room visit. Pollution from power plants leads to over 1700 heart attacks annually, and almost 1000 premature deaths per year.[3] Mercury pollution from power plants limits consumption of fish caught in all of Michigan's inland lakes and streams, has crippled our multi-billion dollar fishing industry, and once in our bodies results in a loss of intelligence for life.

**Q: If investment in renewable energy is good for Michigan, why do we need a Renewable Energy Standard?**

**A:** There is no free market for electricity and Michigan already has a coal and nuclear mandate – utilities build new power plants through surcharges (increased rates) on customers' bills and customers are required to buy this power while energy companies are guaranteed profits. A renewable energy standard provides the needed market stability and regulatory environment for investors to come into the state and spend millions on renewable energy developments. A successful RES acts to level the playing field for renewables by offsetting the enormous subsidies currently enjoyed by fossil fuel and nuclear technologies. The implementation of a 20% by 2020 RES and a strong energy efficiency program would also drastically reduce Michigan's global warming emissions - by reducing power plant pollution by 30% by 2020.

Experience in nearly two dozen other states has shown that voluntary renewable energy programs do not create meaningful new development and investment. A NREL study shows that by 2010, voluntary programs alone would only increase renewable energy generation by about one percent.[4] For example, if DTE's GreenCurrents program meets its subscriber goal, new renewables would only be .6% of their total load. Because there is no market distinction between dirty and clean electricity, utilities will continue charging a premium for clean electricity. The large investments in renewable energy are occurring in states with standards in place (over 90% of new generation).

**Q: Will investment in clean energy raise rates in Michigan?**

**A:** The Public Service Commission's 21st Century Energy Plan analysis shows that the combined Energy Efficiency and Renewable Energy scenario is cheaper than a coal and nuclear scenario for Michigan.[5] The recent NextEnergy study found a scenario combining a RES and Energy Efficiency would deliver the lowest long-term utility rates compared with any other scenario – *including relying only on new coal plants.*[6]

A recent study by Environment Michigan Research & Policy Center shows a 20% by 2020 RES and strong Energy Efficiency Programs will save Michigan rate payers over $2.2 billion through 2020.

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A March 2007 study by the Department of Energy found that state renewable energy standards have minimal rate impacts. This study which compares the results from 28 RES programs shows an average electricity bill increase of just 38 cents for a typical residential household (less than $5 a year) with six states seeing lower rates. [7]

The Chamber of Commerce's claim that a RES will cost Michigan $7 billion is misleading and contains many erroneous assumptions. The cost of wind used in their analysis is inflated and it ignores the fact that renewable technology costs will continue to decline over time. The analysis also wrongly assumes the RES would come from 100% wind instead of a diverse mix of wind, biomass, and landfill gas sources as the PSC has modeled. More importantly it does not compare relative costs of new renewables with other sources of new generation – it compares renewable energy with paying for nothing. The question is whether citizens' money will be spent on more coal or nuclear plants or on the cheapest option – a combined clean energy scenario of a RES and Energy Efficiency Programs.

**Q: How has the recent increase in the cost of wind turbines affected the renewable energy market outlook?**

**A:** The cost of wind turbine raw materials such as steel and the wind turbine demand shortages are predicted to level out within the next few years as supply catches up. The cost of wind and solar have declined 80%-90% in the last decade and analysts predict wind turbine prices will continue to decline over the next decade. The National Renewable Energy Laboratory states that the price of renewable energy will drop at least another 45 percent over the next 20 years. More importantly new coal and nuclear proposals are suffering from the same cost increases due to glut of new plant proposals, fossil fuel price volatility and increased raw material costs, transportation, and pollution control equipment.

**Q: How have other states met their RES targets?**

**A:** *Texas:* 5,880 MW by 2015 standard and is one of the most successful programs in the country; they started with a 2,000 MW requirement by 2009, but the program was so successful in 2005 they increased the standard.

*California:* 20% by 2010 standard and is on track to meet this goal – the ability to hit their original goal of 20% by 2017 was considered so feasible that the state moved up their timeline by 7 years.

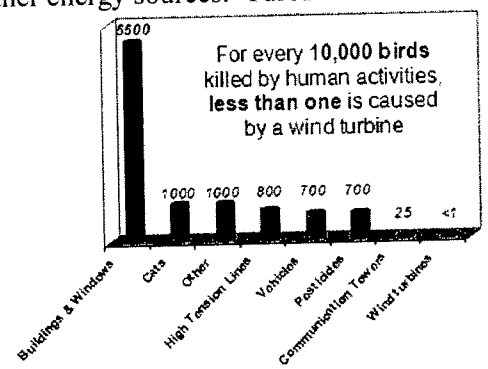
*Minnesota*: 25% by 2025 standard (30% by 2025 for Xcel the largest provider in the state) - so successful, they just raised their goal; they met their original goal 8 years ahead of time.

*Colorado*: 20% by 2020 standard but started with a 10% by 2015; they passed their original RES on the ballot in 2004. CO will meet their 10% goal this year, eight years earlier than required by the legislation. Hence this year CO doubled its RES to 20% and is expected to add 1.9 billion to the economy as a result.

Other states have also seen success and increased or accelerated their standards: Arizona, Nevada, New Jersey, New Mexico, Pennsylvania, and Wisconsin.

**Q: What about aesthetic and wildlife concerns around wind turbines?**

**A:** The choice is not "wind vs. nothing" – it is "wind vs. other options." Most wind farms can be sited in farm areas where farmers receive $5,000 - $8,000 per turbine annually and can farm right up to the turbines – a great local revenue sources for farmers, schools and communities. The National Audubon Society supports wind power because its wildlife impact is less than that of other energy sources. Turbines should be strategically sited using sensible guidelines.



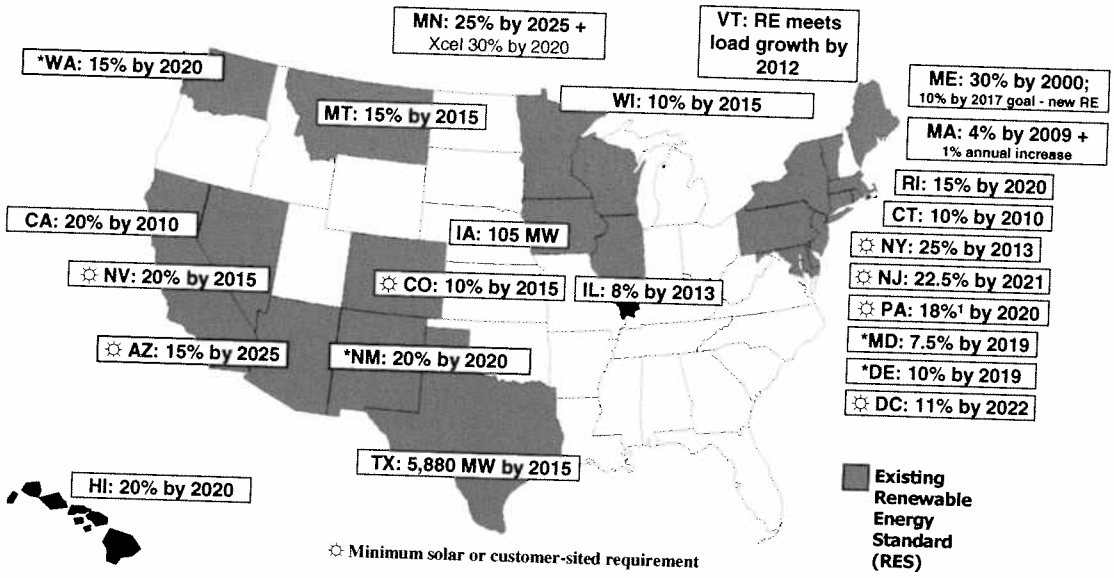

Data source: Erickson et al., 2002. Summary of Anthropogenic Causes of Bird Mortality.

[7] March 2007.DOE's Lawrence Berkeley Laboratory

# *Michigan Should Adopt a Renewable Energy Standard of 20% by 2020*
*(HB 4539 & SB 385)*

Twenty three other states (plus the District of Columbia) have Renewable Energy Standards (RES)*

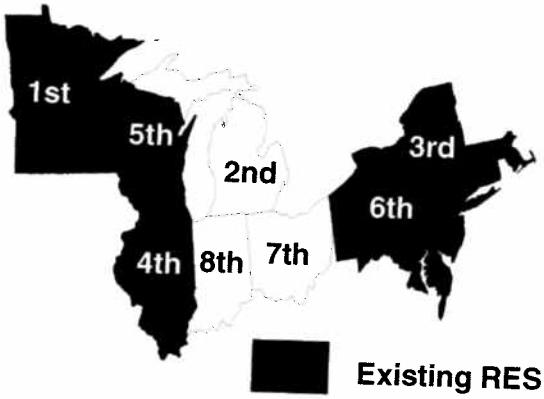
- Michigan has to set the bar high to be competitive and catch up to other states.



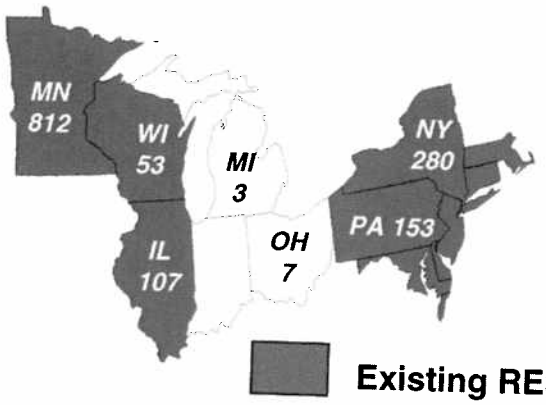

## Michigan is falling behind Great Lake's States in Renewable Energy Generation

- Our neighbors with a RES are already benefiting from job creation and cleaner air because of their commitment to renewables.
- Michigan has significant renewable potential (ranks 2nd in the region for wind generation potential), but has not yet acted.

***Great Lakes Basin***
***On-Shore Wind Energy Potential (ranking) *****




***Great Lakes Basin***
***<u>Installed</u> Renewable Wind Power (MW)****

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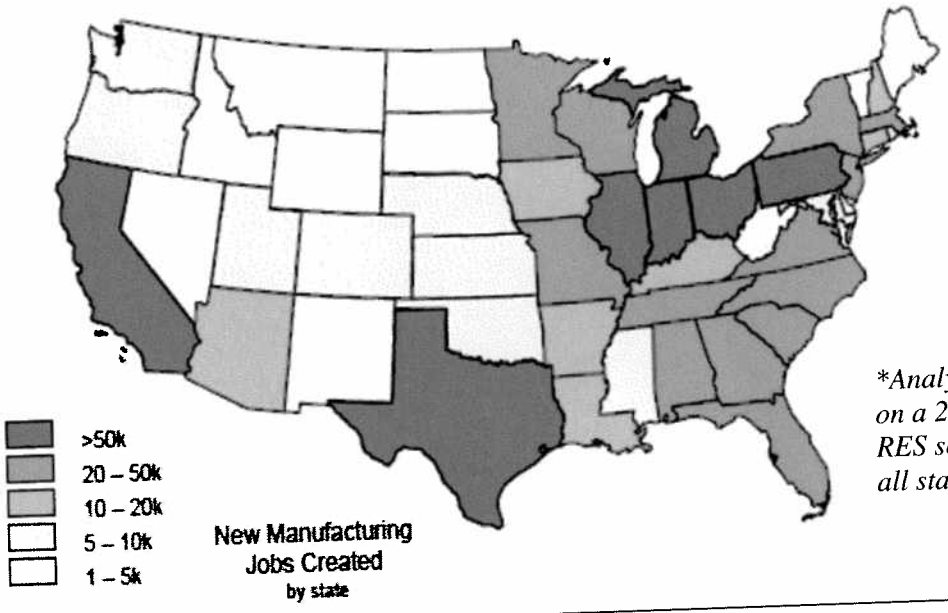
*1 MW of electricity powers 300 average U.S. homes; one utility scale wind turbine is on average 1MW-1.5MW

*Source: Union of Concerned Scientists, American Wind Energy Association, Database of State Incentives for Renewables & Efficiency
**Wind Energy Potential - *An Assessment of the Available Windy Land Area and Wind Energy Potential in the Contiguous United States*, Pacific Northwest Laboratory (average power output); as measured by annual energy potential in the billions of kWhs, factoring in environmental and land use exclusions for wind class of 3 and higher (AWEA.org).

# Renewable Energy Standards = JOBS!

- If Michigan makes a strong commitment to renewable energy…
  - Our state is positioned to be one of the top 6 states in the country to benefit from renewables development.
  - **Over 50,000 manufacturing jobs could be created from wind alone.**[1]
- Michigan cannot afford to ignore this huge opportunity to leverage its manufacturing strength.

***Job Generation & Economic Development from Wind (2030)[1] ****

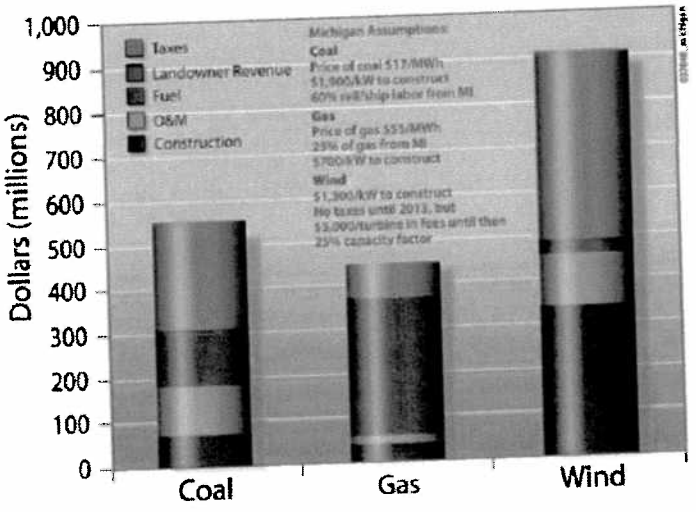



**Analysis is based on a 20% by 2020 RES scenario for all states*

# Wind and Renewables are the Clear Answer for Michigan

***Direct Economic Benefit to the Economy from New Generation in Michigan (Revenues)[2]***

Renewable Energy Sources such as wind keep more dollars in state fueling our economy.

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1) Source: Wind Energy Works Collaboration (Union of Concerned Scientist, National Renewable Energy Laboratory, US Department of Energy – Renewable Energy & Energy Efficiency, American Wind Energy Association)
2) Source: National Renewable Energy Laboratory, Comparing Statewide Economic Impacts of New Generation from Wind, Coal and Natural Gas in Arizona, Colorado and Michigan, Technical Report NREL/TP-500-37720, May 2006.

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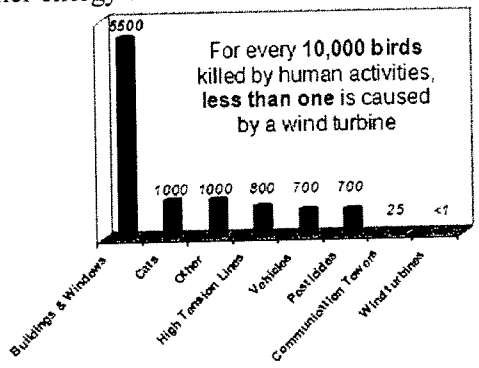


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